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SPECIFICATION

CLASS MAINTENANCE PLAN (CMP) PREPARATION FOR SURFACE SHIPS

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SPECIFICATION
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1. SCOPE

This specification defines preparation requirements for Class Maintenance Plans (CMPs) for U.S. Navy surface ships, except aircraft carriers (CVs/CVNs). It also applies to Class Maintenance and Modernization Plans (CMMPs).

1.1 APPLICABILITY. Use of this specification is mandatory when preparing CMPs and identifying prescribed, recurring maintenance tasks for new ship classes. New ship classes are defined herein as those which do not have a completed CMP or database of prescribed, recurring maintenance tasks by the date of this specification. Use of this specification for modifying CMPs for existing ship classes is required when so directed by the NAVSEA Ship Program Manager (SPM), Direct Reporting Program Manager (DRPM), or Program Executive Office (PEO). When prescribed maintenance tasks for existing ship classes are being modified because of equipment changes or recommendations from fleet units and maintenance support activities, but a reissue of the CMP document is not necessary, the following requirements apply:

(a) If no Reliability Centered Maintenance (RCM) analysis performed in accordance with MIL-P-24534A is on file, MIL-P-24534A analysis shall be performed on the affected equipment in accordance with paragraph 3.1.2 to produce a list of Planned Maintenance System (PMS) and CMP tasks, where it can be determined that the expected results will be commensurate with associated costs.

(b) If an RCM analysis performed in accordance with MIL-P-24534A is on file, the RCM analysis shall be updated using the procedures of paragraph 3.1.2 for affected equipment to produce a modified list of PMS and CMP tasks, where it can be determined that the expected results will be commensurate with associated costs.

1.2 OBJECTIVE. The objective of this specification is to standardize CMP development procedures by defining the CMP format, the topics to be included, and how prescribed ship class maintenance tasks shall be selected. This specification defines the content of CMPs as required by the Chief of Naval Operations "MAINTENANCE POLICY FOR NAVAL SHIPS" (OPNAVINST 4700.7).

1.3 GENERAL. As required by OPNAVINST 4700.7, the maintenance of each ship class shall be defined in a CNO approved Maintenance Program. The approach for executing this Program is defined in the Class Maintenance Plan (CMP) which includes all preventive maintenance tasks and maintenance support requirements, following the concepts of RCM. RCM concepts are used so that the CMP will specify only those tasks necessary to achieve maximum operational availability at the lowest practical cost.

Maintenance tasks in support of the class maintenance program shall be defined during CMP development. The process shall identify planned maintenance requirements, including mandated requirements and concurrent maintenance requirements. Each of these requirements is described in section 3.1, TECHNICAL REQUIREMENTS. When planned maintenance requirements are developed, the appropriate level of accomplishment shall be determined based on ship's force capabilities and the class maintenance program.

When this is complete, all organizational level (O-level) requirements are to be incorporated in the ship's force PMS. The total ship's force PMS package is considered a supplement to the CMP and shall be distributed to the ship in accordance with NAVSEAINST 4790.3. All remaining requirements, for intermediate-level (I-level) and depot-level (D-level) tasks, shall be incorporated into the CMP.

The CMP document must:

(a) Record the maintenance program of the ship class.

(b) Outline all planned maintenance in support of that program for systems in the 100 through 700 expanded ship work breakdown structure (ESWBS) groupings.

(c) State that all mandated maintenance requirements have been integrated with those developed by the RCM process.

(d) State that all O-level planned maintenance is incorporated in the ship's force PMS package and is considered a supplement to the CMP.

(e) State that all I-level and D-level maintenance requirements are incorporated in the CMP.

(f) Describe the responsibility for implementation of CMP maintenance requirements by O-level, I-level, and D-level activities.

(g) Describe the methodology used to schedule planned maintenance requirements.

(h) Describe the feedback system to report accomplishment of maintenance actions for tracking and scheduling purposes; recommendations for changes to the CMP or PMS task databases; and results of material inspections and assessments for planning and scheduling upcoming maintenance availability requirements.

(i) Describe Condition Based Maintenance (CBM) diagnostic systems that are approved and installed and include any resulting tasks in the appropriate CMP or PMS package.

(j) Describe the process by which work packages for I-level and D-level availabilities are developed.

(k) Identify the responsibilities for lifecycle management of the CMP.

The information is to be presented as it relates to the intent of the CMP -- maintenance of the class -- and not as a sole information source for ships' characteristics or other information. All sections shall be written as concisely as possible to provide the necessary information and to avoid duplication with other documents.

At some point in the future, CMP and PMS documentation will be integrated as a single consolidated product in order to facilitate the Regional Maintenance Concept (RMC), implement a single business process (the Integrated Fleet Maintenance Management Model (IFMM)), and eliminate redundancies among maintenance echelons. After the CNO approves the RMC and IFMM for fleet implementation, and when the information systems and supporting infrastructure are prepared to support them, NAVSEA SPMs, DRPMS, PEOs and Type Commanders (TYCOMs) shall consolidate the maintenance support documentation in a coordinated effort.

1.4 EXCLUSION. This specification does not apply to Nuclear Propulsion Systems under cognizance of NAVSEA 08, Special Project Alterations (SPALTS) affecting the configuration and/or capabilities of systems and equipments under the cognizance of the Strategic Systems Project Office (SSPO), or Communications Security (COMSEC) equipments controlled and supported by Commander Naval Telecommunications Command (COMNAVTELCOM).

2. APPLICABLE DOCUMENTS

The following documents, of the issue in effect, form a part of this specification:

OPNAVINST 4700.7( ) - Maintenance Policy for Naval Ships

OPNAVINST 4790.4( )	-	Maintenance and Material Management (3-M) Manual
OPNAVNOTE 4700	-	Notional Durations, Intervals, and Repair Man-days for Depot Level Availabilities of United States Navy Ships
MIL-STD-1388-1A	-	Logistic Support Analysis
MIL-STD-1388-2B	-	DOD Requirements for a Logistic Support Analysis Record
NAVSEA S9AAO-AB-GOS-010/GSO	-	General Specifications for Overhaul
MIL-P-24534A(NAVY)	-	Planned Maintenance System, Development of Maintenance Requirements Cards, Maintenance Index Pages, and Associated Documentation
NAVSEA S9081-AB-GIB-010/MAINT	-	Reliability-Centered Maintenance Handbook
NAVSEA SL720-AA-MAN-010	-	Fleet Modernization Program Management and Operations Manual
NAVSEA S0300-BD-PRO-010	-	ILS Procedures Manual
NAVSEA S9040-AA-GTP-010/SSCR	-	Shipboard Systems Certification Requirements for Surface Ship Industrial Periods (Non-Nuclear)
WARFIGHTING IMPROVEMENT PLAN (WIP)	-	As applicable

3. REQUIREMENTS

3.1 TECHNICAL REQUIREMENTS

3.1.1 Task Categories. Prescribed maintenance tasks developed in accordance with this specification shall consist of the following types of tasks:

- Periodic Maintenance: tasks performed at fixed intervals
  - RCM tasks and inactive equipment maintenance (IEM) tasks, developed or validated using MIL-P-24534A
  - Condition assessment tasks that were not developed or validated using MIL-P-24534A, including CBM tasks that are part of an approved CBM diagnostic system
  - Mandated maintenance tasks as prescribed in specific documents
- Occasional Maintenance: tasks performed when warranted by some other event
  - Qualified repair tasks, where the scope of work is determined by an RCM or condition assessment task
  - Concurrent maintenance tasks of a limited nature, that can be economically performed at the time RCM or mandated tasks are accomplished

Some of these tasks will be assigned to ship's force (organizational-level). Those tasks shall be included in the ship's force PMS package.

3.1.2 Periodic Maintenance Task Selection. Periodic maintenance tasks are performed at fixed intervals or periodicities. Some are periodic tests (failure finding tasks) or inspections (condition directed tasks). Others are periodic replacement or rework (time directed) tasks. Each periodic maintenance task is placed in the CMP because the CMP Development Activity has concluded that the task's benefit to the ship class justifies the expense of performing it strictly according to its periodicity. If there is reason to doubt this conclusion, there is reason to revisit the decision to designate the task as a periodic maintenance task.

In general, condition directed and failure finding maintenance is expected to prevent more failures, and be more cost effective, than time directed maintenance. Therefore, the task categories in this specification are intended to establish a bias toward condition directed and failure finding maintenance, and against time directed maintenance.

The following procedures shall be observed when selecting periodic maintenance tasks for inclusion in the CMP task database. The procedures are to be followed when preparing a new CMP, or when preparing a complete reissue of an existing CMP and its task database and so directed by the NAVSEA SPM, DRPM, or PEO.

3.1.2.1 RCM and IEM Tasks. As required by OPNAVINST 4700.7, preventive maintenance tasks shall be developed for inclusion in a CMP in accordance with RCM principles. All tasks included in the CMP are subject to the RCM analysis prescribed in MIL-P-24534A. If a Logistics Support Analysis (LSA) is performed under MIL-STD-1388-1A and MIL-STD 1388-2B, RCM analysis of MIL-P-24534A shall be included as part of LSA. If a LSA is not done, MIL-P-24534A analysis shall be performed independently.

This category is not based on the nature of the task itself. RCM tasks may be time directed, condition directed, or failure finding tasks. This category is based on the method used to develop or validate the task. If the task is developed or validated using RCM analysis performed in accordance with MIL-P-24534A, it is an RCM task.

3.1.2.1.1 Systems for which MIL-P-24534A Analysis Exists. The PMS Coordinating Activity shall provide a copy of the complete documentation of PMS analysis phases 1 through 10 to the CMP Development Activity. The CMP Development Activity shall review all preventive maintenance tasks that: (a) are marked with a Y in Blocks 11 or 12 of the Logic Tree Analysis Form (paragraph 3.7.6.7 of MIL-P-24534A) and (b) have NOT been selected for inclusion in O-level PMS (paragraph 3.7.11.1 of MIL-P-24534A). O-level tasks that have traditionally required an I or D-level activity to assist or to accomplish shall also be reviewed. These tasks and the IEM tasks developed in phase 10 of the RCM analysis (paragraph 3.7.12 of MIL-P-24534A) that are beyond ship's capability or capacity shall be included in the CMP task database unless discussions between the PMS Coordinating Activity and the CMP Development Activity result in changes in task selection. The CMP Development Activity may solicit RCM data from the In-Service Engineering Agents (ISEAs) and NAVSEA.

3.1.2.1.2 Systems for which MIL-P-24534A Analysis Does Not Exist. For a new-construction ship class, a RCM analysis shall be conducted in accordance with the ILS Procedures Manual S0300-BD-PRO-010. The CMP Development Activity shall participate and provide inputs to the LSA/RCM process to facilitate CMP task development. From this analysis, the CMP Development Activity shall include all applicable preventive maintenance tasks and all IEM tasks beyond ships force capability or capacity in the CMP task database. For an existing ship class, the CMP Development Activity shall be responsible for performing phases 1 through 10 of the MIL-P-24534A analysis, where it can be determined that the expected results will be commensurate with associated costs, and shall identify those selected tasks that are beyond the capability and capacity of the organizational level. These tasks shall be included in the CMP task database; O-level tasks shall be forwarded to the PMS Coordinating Activity via NAVSEA (SEA 04TD) for revision of the PMS package.

3.1.2.2 Condition Assessment. All maintenance requirements prescribed by the following sources and requiring I- or D-level action, that are not developed or validated using MIL-P-24534A, shall be recorded in the CMP task database under this category:

- NAVSEA condition assessment programs, such as the Assessment of Equipment Condition (AEC) program
- Type Commander condition assessment programs
- CBM tasks that are part of an approved CBM diagnostic system. Such tasks may be performed continuously, for example when performed by an on-line monitoring system.

Those items that are O-level requirements shall be forwarded to the PMS Coordinating Activity via NAVSEA (SEA 04TD) for inclusion in the ship's force PMS.

CBM tasks can be expected to change as Navy CBM diagnostic systems change. Those changes shall be developed and entered into PMS as a part of the approval process. They shall enter the CMP change process as soon as approval of the CBM diagnostic system occurs.

Before a new condition assessment task is recorded in the CMP task databases, the authority submitting the task shall be queried on any task for which a "Y" appears neither in Block 11 nor 12 of the Logic Tree Analysis Form, asking for either (a) a completed Failure Modes and Effects Analysis and a Logic Tree Analysis (Figures 5 and 6, MIL-P-24534A), or (b) a cost benefit analysis showing that the costs of these analyses would not be commensurate with the benefits expected from them. If completed RCM forms demonstrate that the task was developed or validated using RCM analysis conducted in accordance with MIL-P-24534A, the task shall be designated an RCM task in accordance with paragraph 3.1.2.1 above.

3.1.2.3 Mandated Maintenance. All maintenance requirements not developed or validated using MIL-P-24534A that are prescribed by the following sources and that require I- or D-level action shall be recorded in the CMP task database under this category:

- Naval Ships Technical Manual (NSTM)
- NAVSEA Shipboard Systems Certification Requirements Manual
- Other directed tasks approved by COMNAVSEA
- Type Commander routines

Those items that are O-level requirements shall be forwarded to the PMS Coordinating Activity via NAVSEA (SEA 04TD) for inclusion in the ship's force PMS.

Before these requirements are recorded in the CMP task databases, the authority requiring the mandated task shall be queried on any task for which a "Y" appears neither in Block 11 nor 12 of the Logic Tree Analysis Form, asking for either: (a) a completed Failure Modes and Effects Analysis and a Logic Tree Analysis (Figures 5 and 6, MIL-P-24534A), (b) a cost benefit analysis showing that the costs of these analyses would not be commensurate with the benefits expected from them, or (c) citation of the authority requiring performance of the task. If completed RCM forms demonstrate that the task was developed or validated using RCM analysis conducted in accordance with MIL-P-24534A, the task shall be designated an RCM task in accordance with paragraph 3.1.2.1 above.

Mandatory maintenance is generally composed of time directed tasks. As technology improves, and as feedback from the maintenance process provides better information, mandatory tasks should evolve to applicable and effective condition directed tasks. Therefore, when CMPs are being developed or revised, mandatory maintenance should be reviewed to determine the feasibility of their replacement by RCM tasks (tasks developed in accordance with MIL-P-24534A). If this is not feasible, they should be reviewed to determine the feasibility of their replacement by non-RCM condition assessment tasks.

3.1.3 Occasional Maintenance Task Selection. Occasional maintenance tasks are performed when triggered by specific events or occasions. Some tasks are tests or inspections. Others are replacement or rework tasks. The triggering event may be the report of degraded material condition from a periodic inspection, or the scheduling of a periodic task that would make an otherwise burdensome task easy to perform. These tasks are not periodic requirements, and shall only be included in a work package when approved by the TYCOM. No frequency of performance shall be assigned to an occasional task.

The following procedures shall be observed when selecting occasional maintenance tasks for inclusion in the CMP task database. The procedures are to be followed when preparing a new CMP, or when preparing a complete reissue of an existing CMP and its task database and so directed by COMNAVSEA.

3.1.3.1 Qualified Repairs. An inspection performed by an RCM or condition assessment task may reveal a degraded condition that warrants repair work. A qualified repair task, as an occasional maintenance task in the CMP task database, is used by the maintenance manager as a Condition Based Maintenance (CBM) repair option to help in assembling the specification for the work package.

The scope of the repair work in a qualified repair task is qualified, or limited, by the inspection that prompted the repair. The scope of work in a qualified repair task shall therefore be determined solely by the results of the inspection. Tasks with a broad or vague scope of work, such as "overhaul all 2-inch globe valves in the system," are not qualified repair tasks and do not satisfy the intent of this paragraph.

3.1.3.2 Concurrent Maintenance. When planned maintenance is performed, additional maintenance may be performed economically in conjunction with the planned maintenance, even though it is not a required portion of the planned task. For example, it is often prudent to schedule Tank Level Indicator (TLI) inspections during NSTM-based tank inspections, even though the NSTM inspection requirements do not mention TLIs.

3.1.4 Task Designation. A task shall be designated by an eight-digit alpha numeric sequence consisting of a letter denoting the type of maintenance requirement followed by a five-digit ESWBS number and a two-digit sequence number. If a revision designation is to be included, a ninth character is added at the end of the numeric sequence to denote the revision, with the first revision being designated by an 'A', the second by 'B', and so on. If it is clearer to prepare a duplicate task, this may be done, but separate numbers will be used in the scheduling system for actually planning maintenance. The maintenance requirement prefix letters shall be as follows:

P - RCM-developed tasks
L - Inactive equipment maintenance
I - Condition assessment
M - Mandated maintenance
Q - Qualified repair
C - Concurrent maintenance

Note: see paragraph 3.1.5 regarding "E" tasks (time-directed tasks not derived from RCM).

The designation may be separated by a dash after the prefix letter and after the five digit ESWBS number, if required by the maintenance management information system that serves the ship class. The following is an example of a CMP task number:

M-12345-001

3.1.5 Updating the Class Maintenance Plan. Each CMP and associated CMP task databases shall be reviewed at least annually for updating by the activity maintaining the CMP. CMPs may be reviewed and updated from time to time without reference to this specification. However such reviews and updates shall not satisfy this requirement to perform a periodic review.

The periodic review shall involve analysis of feedback information (see paragraph 3.3.2.4.2), age-reliability information, alteration information, RCM analyses of affected equipment, and other relevant data. Results shall be reported to COMNAVSEA and TYCOMs in the form of a set of recommended changes to be issued or a statement that no changes are required. Recommended changes, with accompanying RCM analysis, shall also be provided to the PMS Coordinating Activity for an RCM-based review and incorporation of approved O-level tasks into the PMS package for affected ships.

Periodic reviews of CMPs not originally developed under this specification will initially encounter time directed tasks designated as "E" or "Engineered" tasks. When the NAVSEA SPM, DRPM or PEO directs that such tasks be reviewed using the process described in paragraphs 3.1.2 and 3.1.3, they shall be redesignated in one of the following ways:

- RCM-based condition directed task (P), if the "E" task can be replaced by a condition directed task that is determined to be applicable and effective using RCM analysis conducted in accordance with MIL-P-24534A
- RCM-based time directed task (P), if the time directed "E" task (or a modified task, if necessary) can be determined to be applicable and effective using RCM analysis conducted in accordance with MIL-P-24534A

- Mandated maintenance (M), if the task is prescribed by a specific authority as described in paragraph 3.1.2.3 above
- No task (fix when fail), if RCM finds no applicable and effective maintenance task corresponding to the "E" task and if no authority prescribes performance of the task

Changes to CMP tasks resulting from these reviews shall be promulgated to holders of the CMP. Prior to promulgation, all changes shall be approved by the TYCOMs and COMNAVSEA.

3.2 CLASS MAINTENANCE PLAN DOCUMENT. The Class Maintenance Plan has two basic elements: narrative text describing the maintenance program, and the database(s) comprising the maintenance requirements. In Class Maintenance Plans for new ship classes, these elements shall be produced and distributed via electronic media. They may also be produced and distributed in printed form, as authorized by COMNAVSEA. In existing ship classes, either element may be produced and distributed in either form, as authorized by COMNAVSEA.

3.2.1 Electronic Format. Electronically-produced Class Maintenance Plans shall use the following formats for these elements:

3.2.1.1 Narrative Text. The narrative text shall be provided in the electronic format specified by COMNAVSEA.

3.2.1.2 Maintenance Requirements. The long-range objective in selecting database elements is to provide a common database structure across all platforms that will enable a common maintenance process supported by a common automated information system. Accordingly, the database(s) comprising the maintenance requirements for new ship classes shall be provided in the format of the NAVSEA Maintenance and Modernization Business Unit (MMBU)'s Enterprise Data Model.

3.2.2 Binder/Cover. Printed Class Maintenance Plans shall be bound in loose-leaf 3-ring binders or rugged pressboard-type binders similar to GS-005-90124 (NSN 7510-00-582-4201).

3.3 CONTENT REQUIREMENTS. The Class Maintenance Plan shall consist of two volumes as follows:

(a) Volume One. Provides a detailed description of the ship class's maintenance strategy and identifies the procedures and responsibilities for implementing the maintenance strategy throughout the life cycle. This volume serves to introduce the class's maintenance strategy to personnel who may be new to the class: for example, to a new Chief Engineer, Supply Officer or Commanding Officer; to a new Port Engineer or Type Desk Officer. In the interests of readability, this volume shall be limited to 100 pages exclusive of required appendices. Title: [Maintenance Strategy] Objectives and Procedures

(b) Volume Two. Provides the products: a compilation of specific Intermediate and Depot-level maintenance requirements for the class to be accomplished on a regularly scheduled basis. It shall include Maintenance Planning Forms documenting the maintenance requirements to be accomplished. Title: Maintenance Requirements.

NOTE: Printed editions of Volume One and Volume Two may be bound in a single binder if they fit in a binder sized two inches or less.

3.3.1 Introductory Pages. The following pages shall introduce the Class Maintenance Plan, for electronic editions, or shall introduce each binder of the Class Maintenance Plan, for printed editions.

3.3.1.1 Title Sheet. The CMP title sheet shall include the following:

- (identify ship class) Class Maintenance Plan
- Volume One (Two) (as appropriate)
- Title
- Date of Issue
- Naval Sea Systems Command Seal
- Naval Sea Systems Command

No page number shall be assigned. An example of the title sheet is shown in Figure 1.

3.3.1.2 Change Record. The CMP Change Record shall conform to Figure 2 and shall contain the following information:

- Change Number
- Date of Change
- Change Title/Brief Description
- List of Pages Affected by the Change
- Validating Signature

3.3.1.3 Table of Contents. The CMP Table of Contents shall conform to Figure 3 and shall include the following information:

- Section Number
- Section Title
- Paragraph Number
- Paragraph Title
- Page Numbers

3.3.1.4 Tables and Figures. A listing of the Tables and Figures included in the text shall be provided.

3.3.2 Volume One. The following provides instructions for the preparation of Volume One of a Class Maintenance Plan.

3.3.2.1 Executive Summary. A stand alone statement describing the CMP. It shall state that, when issued, the CMP prescribes the approved maintenance plan for the ship class.

3.3.2.2 Section One - Introduction.

3.3.2.2.1 Purpose. The following wording shall be used for this section:

> "The _____ Class Maintenance Plan (CMP) has been developed in accordance with the requirements of "MAINTENANCE POLICY FOR NAVAL SHIPS" (OPNAVINST 4700.7 Series). The CMP defines the maintenance program for all ships of the class and the maintenance actions necessary to implement that strategy. The objective of the CMP is to provide the guidelines to enhance ship readiness and to assist in the planning, budgeting and acquisition of resources to maintain the ships of the class. The CMP provides Type Commanders (TYCOMs) and other cognizant naval maintenance support activities with concepts and objectives designed to reduce maintenance costs and enhance the ship's operational readiness and availability. In addition to the maintenance program and maintenance requirements, it specifies responsibilities and resources required to perform CMP requirements for the ships of the class throughout their life cycle."

3.3.2.2.2 Ship Class Description. This subsection shall present a brief description of the ships of the class. It shall describe only the major features. If applicable, maintenance related information such as unique systems or equipment having special maintenance requirements shall be identified. A table of the principal unclassified characteristics, including those features enabling the class to conduct its assigned missions, shall be presented. An example of this table of principal characteristics is shown in Figure 4.

3.3.2.2.3 History. This subsection shall provide a short history of the development of the class with emphasis on any unique items affecting the class maintenance program. It shall also include the identification of major organizations that participated in the design and development of the class of ships, if possible.

3.3.2.3 Section Two - Class Maintenance Program

3.3.2.3.1 General Policy. This subsection shall describe the general maintenance program to be implemented for ships of the class.

3.3.2.3.2 Operational Profile. This subsection shall present a brief description of the notional operating cycle of the class. When some members of a class follow a different cycle, such as the Overseas Family Residency Program (OFRP), that cycle shall also be described here. The length of the maintenance availabilities and the interval between depot availabilities shall be based on the durations promulgated in "NOTIONAL INTERVALS, DURATIONS AND REPAIR MANDAYS FOR DEPOT LEVEL AVAILABILITIES OF U.S. NAVY SHIPS," OPNAV NOTICE 4700. It shall include a figure (see Figure 5) for each operating cycle in the class, showing the major operating and maintenance periods such as:

- Deployment
- Intermediate Maintenance Availability periods
- CNO scheduled depot availabilities
- Other major evolutions

This subsection shall also describe the rationale and periodicity for any special maintenance evolutions such as drydocking.

3.3.2.3.3 Maintenance Requirements. This subsection shall briefly define the types of maintenance tasks listed in the CMP task database and their letter designations. The definitions are listed in paragraph 3.1:

- MIL-P-24534A Requirements
  - RCM Requirements (P)
  - IEM Requirements (L)
- Condition Assessment Requirements (I)
- Mandated Maintenance Requirements (M)
- Qualified Repair Tasks (Q)
- Concurrent Maintenance Requirements (C)

It shall also state that all preventive maintenance requirements and IEM requirements, whether for O-, I-, or D-level execution, have been developed from a single analytical process performed in accordance with MIL-P-24534A. The preventive maintenance tasks must embrace the principles of RCM, which call for performance of only that maintenance which minimizes the risk of unexpected failure and which is cost-effective, considering the likelihood and consequences of failure.

3.3.2.3.4 Execution. This subsection shall briefly describe how the maintenance program is executed. It shall explain that planned maintenance requirements must be accomplished. It shall state that if there is rationale for changing a maintenance requirement (scope, frequency, etc.), a CMP task change recommendation should be submitted, and it shall explain how to submit the recommendation. In addition to IMAVs and depot repair periods, it should also note that many condition-directed tasks will be performed during ships' operational periods. These tasks may require support by activities other than an I- or D-level activity, such as TYCOM Field Representatives, ISEA, Performance Monitoring Team (PMT), Port Engineer, etc.

3.3.2.4 Section Three - Lifecycle Management. This section shall briefly describe the procedures used in the implementation, scheduling, feedback and assessment of ship maintenance requirements and identify the major organizational responsibilities in life cycle maintenance management of ships of the class.

3.3.2.4.1 Implementing and Scheduling Maintenance Requirements. This subsection shall describe how the CMP maintenance requirements are implemented. It shall name the system used to generate a package of

prospective tasks (for example, the Long Range Maintenance Schedule (LRMS) system). It shall state that prospective time directed tasks must be validated by condition assessment before inclusion in a work package for an availability. It shall state that the schedule will indicate a point in time at which each planned action is required. This schedule will denote the depot availability and those requirements to be performed at each one. The scheduling system will also be used to track I-level requirements; however, as IMAV periods are not as firmly scheduled, the schedule does not have to pinpoint a specific IMAV for an action, but will, as a minimum, denote the timeframe in which each action is due. Requirements in the form of test and inspections between availabilities will be keyed to the availability for which the results of the monitoring are required. The schedule will be a dynamic document and will be continually updated as the result of maintenance accomplishment, modifications to the maintenance requirements, unscheduled maintenance actions, changes to equipment, etc. This section shall stress that scheduled requirements must be accomplished and that corrective maintenance will only be performed as a result of equipment failure or as a result of condition-directed tasks noting a need for action.

3.3.2.4.2 Maintenance Program Feedback. This subsection shall describe the basic types of feedback required to maintain an up-to-date CMP task database and to update the scheduling system (see Figure 6):

- Maintenance completed (planned/corrective)
- Results of condition - directed tasks
- Evaluation results of equipment condition assessment programs
- Modernization actions performed
- Any recommended changes to the CMP or CMP tasks
- Changes to the PMS program
- As-found condition reports
- Age-reliability information
- Return costs of maintenance

In addition to describing these types of feedback, this subsection shall identify activities which are specifically required to provide/receive feedback information, including the central activity that has been designated to receive all feedback. Feedback related to other factors may likewise be required but are not addressed here.

3.3.2.4.3 Maintenance Organization and Administration. This subsection shall identify those Navy organizations responsible for administering the ship's class maintenance program. For most ship classes these responsibilities will be identical, however, modifications will be necessary for certain ship classes, e.g., AEGIS. The role of the following organizations, as applicable, shall be summarized: (Note section 4 of this document).

- NAVSEA SPMs, PEOs, or DRPMs
- NAVSEA Technical and Logistics Codes
- PERA (SURFACE)
- Class Planning Yard
- TYCOMs
- Port Engineers or other designated ship husbandry agents
- Fleet Technical Support Centers (FTSCs)
- Performance Monitoring Teams
- PMS Coordinating Activity
- Naval Supply Systems Command (NAVSUP)
- Class Planning Supervisor of Shipbuilding
- NAVSEA Logistics Support Center (NAVSEALOGCEN)
- In-Service Engineering Agents (ISEAs)
- Naval Surface Warfare Center (NSWC)
- Naval Undersea Warfare Center (NUWC)
- Naval Air Warfare Center (NAWC)
- Other - (will include that activity designated as the central point for feedback information if not one of the above).

3.3.2.5 Section Four - Organizational Level Maintenance. This section shall briefly describe O-level maintenance to be performed by a ship's force.

3.3.2.5.1 General - PMS. The following words shall introduce this section:

The O-level maintenance to be performed by ship's force is a combination of planned and corrective maintenance tasks. The compendium of the planned maintenance tasks is called the ship's force PMS, is documented on Maintenance Index Pages (MIPs), is detailed on Maintenance Requirements Cards (MRCs), and is promulgated in accordance with NAVSEAINST 4790.4. It is considered to be a supplement to the CMP. Those O-level planned maintenance tasks requiring outside assistance, either partially or in full, are integrated into the planned maintenance requirements of the CMP task database. Each task shall cross reference the appropriate PMS MIP. In order to accomplish this, copies of PMS Semiannual Force Revisions (SFRs) should be sent by the PMS Coordinating Activity to the activity maintaining the CMP for review. Corrective maintenance and PMS items that cannot be accomplished by ship's force shall be entered into the ship's Current Ships Maintenance Project (CSMP).

3.3.2.5.2 Management of Organizational Maintenance. This subsection should provide a brief description of any shipboard automated data processing system used to manage organizational maintenance.

3.3.2.5.3 MEASURE. The following wording shall be used if the ship's Test Measuring and Diagnostic Equipment (TMDE) are calibrated in accordance with the Metrology Automated System for Uniform Recall and Reporting (MEASURE) Program:

> "The Metrology Automated System for Uniform Recall and Reporting (MEASURE) Program is a system designed to provide for the recall and scheduling of Test Measuring and Diagnostic Equipment (TMDE) into calibration facilities. The MEASURE program is independent of the CMP and no TMDE tasks are included in the CMP task database."

3.3.2.5.4 Other. Briefly describe any unique ship's characteristics that could impact ship's force maintenance. Some examples are Built-in Test Equipment (BITE), Automatic Test Equipment (ATE), CBM diagnostic systems, and Miniature/Microminiature (2M) repair.

3.3.2.6 Section Five - Off-Ship Maintenance. This section is intended to provide a general understanding of the development, accomplishment and reporting of off-ship work packages. It should briefly describe the process used for this purpose, activities involved in off-ship maintenance and the process's relationship to the CMP. It shall include a diagram which portrays the off-ship repair process. (Figure 7 is an example).

3.3.2.6.1 General. When IFMM is the TYCOM implementation process, briefly describe the IFMM model and the basic IFMM blocks. (Figure 8 is an example). If IFMM is not the TYCOM process, describe the TYCOM process.

3.3.2.6.2 CMP input to CSMP. This section shall describe the process for entering CMP tasks into the ship's CSMP.

3.3.2.6.3 CSMP input to CMP. This section shall describe the process used for sending feedback information concerning completed CSMP work to the activity that validates CMP tasks.

3.3.2.6.4 Intermediate-Level Maintenance. This subsection is intended to provide a general understanding of the development, accomplishment and reporting of IMAV work packages. It shall briefly describe Intermediate Maintenance Activities (IMAs) and their role in performing maintenance requirements for the ships of the class.

3.3.2.6.4.1 General. Briefly describe the maintenance activities that will provide support to the ship class by conducting I-level maintenance requirements. These activities include tenders, SIMAs, and Supervisor of

Shipbuilding for commercial industrial services. If screened by the Type Commander, depot level activities such as Ship Repair Facilities (SRFs) or shipyards may perform I-level maintenance.

3.3.2.6.4.2 Intermediate Maintenance Availability Work Package Development. This subsection shall describe how the overall IMAV work package is developed. It shall address:

- Planned CMP maintenance items as reflected in the Long Range Maintenance Schedule
- I-level preventive maintenance items documented in the CMP or Master Job Catalog (MJC)
- CSMP items - deferred ship's force maintenance items and I-level corrective maintenance as a result of failed equipments
- Corrective maintenance items resulting from condition-directed tasks
- Other maintenance and alteration items screened for IMA accomplishment

3.3.2.6.4.3 Work Package Implementation. This subsection shall briefly describe work package implementation procedures such as work package authorization, accomplishment, and reporting. This subsection shall discuss how the record of completed work will be assembled and reported. The role of special personnel such as Port Engineers shall be described as well as any special procedures to be followed.

3.3.2.6.4.4 Other. Briefly describe any unique ship's maintenance requirements that will require special facilities, tooling, or training at the IMAs.

3.3.2.6.5 Depot-Level Maintenance. This subsection is intended to provide a general understanding of the development, accomplishment, and reporting of depot level work packages. It shall briefly describe depot-level maintenance and the role of the depot in support of the CMP.

3.3.2.6.5.1 General. This subsection shall provide a brief statement that depot-level activities may be either a public or private shipyard. It shall also state that the type of maintenance work normally assigned to the depot level will be that beyond the IMA and ship's force capability.

3.3.2.6.5.2 Work Package Development. This subsection shall provide a brief description of how depot-level availability work packages are prepared. This shall include the process by which the repair portion of such a work package is produced from the following:

- Planned CMP requirements
- Concurrent maintenance items
- Availability-related routine items
- Results of condition-directed tasks
- CSMP maintenance items (4790/2K items)
  - failed components
  - non-CMP components
- Other

3.3.2.6.5.3 Work Package Implementation. The process by which work will be authorized and assigned during a depot-level availability shall be discussed. Special procedures for monitoring accomplishment of work, controlling growth, and collecting feedback information shall be described. The role of Port Engineers, Ship Surveyors, other TYCOM Field Representatives, etc., shall be discussed as appropriate. This subsection shall also discuss how the record of final work accomplishment will be developed and reflected in the scheduling system named in Section Three.

3.3.2.6.5.4 Other. Any unique maintenance that requires special facilities, tooling, or training beyond normal requirements shall be described, as well as how the special support is to be provided.

3.3.2.6.6 Off-Ship Monitoring Activities. As the majority of CMP planned maintenance items will consist of condition-directed (test and inspection) items, many of them will be performed prior to, rather than during, an availability. Examples of pre-availability items include Assessment of Equipment Condition (AEC) Program condition inspections, outputs from approved Condition Based Maintenance (CBM) diagnostic systems, and

tests/inspections performed to support work package definition. This subsection shall provide a paragraph describing tasks to be performed by an off-ship activity other than a depot activity or an IMA. It shall identify the off-ship support activities performing these tasks, such as TYCOM Field Representative, Performance Monitoring Team (PMT), Port Engineer, or Naval Surface Warfare Center (NSWC). It shall describe the types of tasks they will perform for the specific class of ships.

3.3.2.7 Section Six - Supply Support. This section shall provide a brief description of the concept and procedures used to provide material support for maintenance availabilities for ships of the class. It shall describe how material to support the CMP requirements is provided. Appendix A provides an example of the scope and content of this section.

3.3.2.7.1 General. The following wording shall introduce this section:

> "This section presents a brief description of the process by which supply support is provided to insure the availability of materials during scheduled ship availability periods. The focus is on material support for periodic maintenance requirements, but material support for selected corrective maintenance is also addressed. Navy organizational activities involved in material support are also identified."

3.3.2.7.2 Supply Support Process. This subsection shall describe the processes of: (a) identifying materials required to support the CMP tasks, (b) planning for the acquisition of these materials, and (c) providing the material during the execution of the maintenance requirements. It shall define the responsibilities of the Defense Logistics Agency (DLA), the Ship Parts Control Center (SPCC), and other supply activities as appropriate. It shall address the effects of CBM on the material forecasting process.

3.3.2.7.3 Hardware Systems Command (HSC) Support. This subsection shall briefly describe any support provided by the various HSCs to implement the maintenance program. A table shall be provided which identifies those ship and weapons systems and equipments that are supported by HSCs (Table 8-1 in Appendix A is an example). This subsection shall define the Programs and Item Cog Symbols listed in the table.

3.3.2.8 Section Seven - Major Alteration Planning. This section shall state whether or not there is a War-Fighting Improvement Plan and should refer to it by its proper title and document number. It should state that information on the alteration program can be found in the Fleet Modernization Program Management and Operations Manual, NAVSEA SL-720-AA-MAN-010. It should also state that the CMP and its scheduling documents do not attempt to schedule Ship Alterations (SHIPALTs).

3.3.2.9 Section Eight - Availability Workload. This section shall provide a table that summarizes the projected intermediate and depot-level workload for each major availability in the notional operating cycle of a ship of the class (Figure 9 is an example). The workload for planned maintenance, corrective maintenance, and major modernization shall be estimated. Data sources include OPNAVNOTE 4700 and other documents such as Phased Maintenance Program Ship Class Master Plans.

3.3.2.10 Appendix A - List of References. Appendix A shall contain a list of technical references that were used as a basis for CMP development. An example of the format for the list of references is shown in Figure 10.

3.3.3 Volume Two. The following provides instructions for the preparation of Volume Two of a Class Maintenance Plan.

3.3.3.1 Maintenance Strategy Summary. This section shall provide a brief summary of the maintenance strategy to be employed for ships of the class. This summary can be the same as that stated in Section Two of Volume One or a synopsis of that section.

3.3.3.2 Maintenance Requirements Development. This section shall summarize how the maintenance requirements for the Class Maintenance Plan were developed. It shall also describe the basic sources from which the tasks were developed, which can include:

- RCM and inactive equipment maintenance (IEM) analysis, performed in accordance with MIL-P-24534A
- Naval Ship Technical Manual (NSTM) requirements
- Periodic inspection visit requirements
- Type Commander routines

This section shall also contain a diagram depicting the primary approach used to develop the Class Maintenance Plan's maintenance requirements.

3.3.3.3 Class Maintenance Plan Task Summary. Tasks shall be listed in ESWBS number sequence. The listing shall contain the following information. Figure 11 is an example.

- Applicable equipment or system title
- CMP task identification number (Maintenance prefix, ESWBS number, sequence suffix)
- Quantity of the equipment or system on a typical ship of the class
- Quantity of equipment or system on which the maintenance task should be performed in preparation for or during an availability
- Brief description of the task
- Frequency for performance of the task (periodic maintenance tasks only)
- Estimate of the mandays to accomplish the task
- Maintenance level of planned accomplishment
- 3M priority code
- Identification number of a related task, if any
- Remarks (e.g., Drydock (D/D) required
- Source of the requirement (for mandated maintenance requirements)

Although the example shows only the chapter number of the reference, the page or paragraph number of the reference may also be added for clarity.

3.3.3.4 Maintenance Planning Forms. This section shall contain the Maintenance Planning Forms (MPF) that provide the information necessary to plan for the accomplishment of the maintenance tasks. The information found in an MPF is listed and described in Appendix B.

4. REVIEW AND APPROVAL

The PEOs, DRPMs or NAVSEA SPMs responsible for acquisition of a new ship class shall develop a Maintenance Program Master Plan for CNO approval, in accordance with OPNAVINST 4700.7. The principal document for executing the approved Maintenance Program Master Plan is the CMP, which shall be prepared by the PEO, DPRM, or SPM responsible for acquisition of the ship class. New CMPs shall be reviewed by both Type Commanders and approved by COMNAVSEA. Lifecycle management of the CMP is the responsibility of the PEO, DRPM, or NAVSEA SPM responsible for lifecycle support. COMNAVSEA is authorized to issue changes to the CMP, but the TYCOMs shall review and approve changes prior to issue.

5. NOTES

5.1 INTENDED USE. This specification shall be used by originators of surface ship CMPs as well as those activities recommending changes to CMPs.

5.2 GLOSSARY OF ACRONYMS. Acronyms used in the preparation of CMPs shall be in accordance with Appendix C of this specification.

5.3 GLOSSARY OF TERMS. When terms found in Appendix D of this specification are used in the preparation of CMPs, their use shall be in accordance with Appendix D.

FIGURES

NOTE: Any figure titled with the words "Example of ..." is not intended to display actual requirements for any class of ships. It is shown for illustrative purposes only.

FIGURE 1. Example of Cover Sheet

(CLASS TYPE)

CLASS MAINTENANCE PLAN
VOLUME I

(MAINTENANCE STRATEGY)
OBJECTIVES AND PROCEDURES

199X

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND

FIGURE 2. Example of Change Record

CHANGE RECORD

Change No.	Date	Title/Brief Description	Changed Pages	Validating Signature

FIGURE 3. Example of CMP Table of Contents

CONTENTS

FIGURE 4. Example of Table of Principal Characteristics

TABLE 1-1.

PRINCIPAL CHARACTERISTICS OF THE DDG-993 CLASS SHIPS

Full Load Displacement	8140 tons
Length Between Perpendiculars	529 feet
Length Overall	563 feet
Beam (Maximum)	55 feet
Draft	29.9 feet
Helicopters	Two Light Airborne Multi-Purpose System (LAMPS), SH-60B Antisubmarine Warfare (ASW) Helicopters
Radars	SPS-55 Surface Search SPS-49 2-D Air Search SPS-48 3-D Air Search
Sonars	SQS-53 Bow-Mounted
Fire Control System (FCS)	Two Mk 74 Missile FCSs One SPG-60 Radar One SPQ-9A Radar One Mk 86 Gun FCS One Mk 116 ASW FCS Two SPG-51 Radars
Missile Launchers	Two quad Mk 141 tubes for HARPOON Surface-to-Surface Missiles (SSMs) Two twin Mk 26 launchers for Standard-MR SAM
Guns	Two Mk 45 5-inch, 54 cal DP Two MK 15 20 mm Phalanx Close-In-Weapon Systems (CIWSs)
Anti-submarine Weapons	ASROC fired from Mk 26 Launcher Six Mk 32 12.75 inch Torpedo Tubes
Main Engines	Four 80,000 shp General Electric LM2500 gas turbines. Two Shafts.
Speed	In excess of 30 knots
Accommodations	20 officers, 304 enlisted men

FIGURE 5. Example of Operational Profile

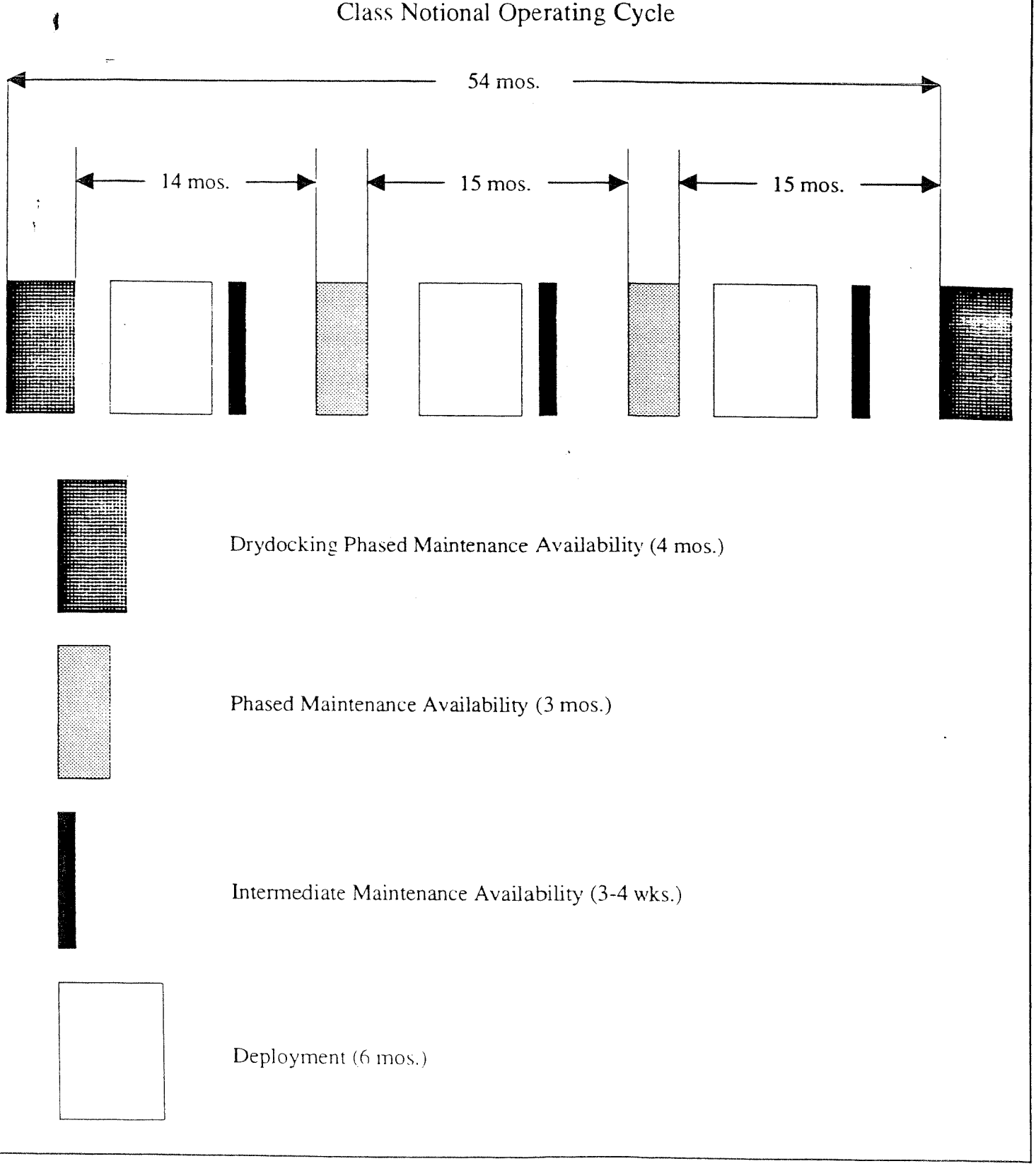


FIGURE 6. Example of Maintenance Program Feedback

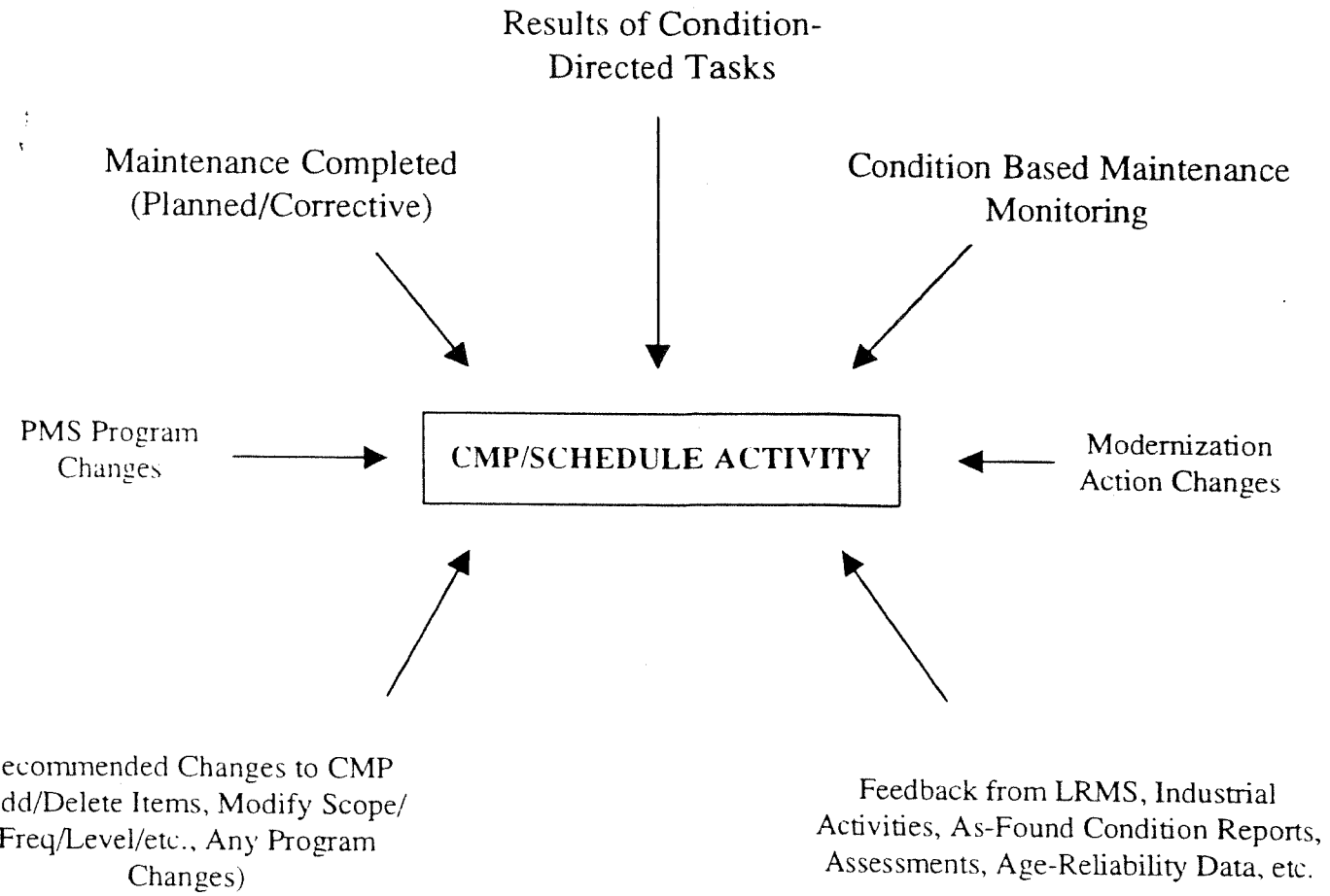


FIGURE 7. Example of Off-Ship Repair Process

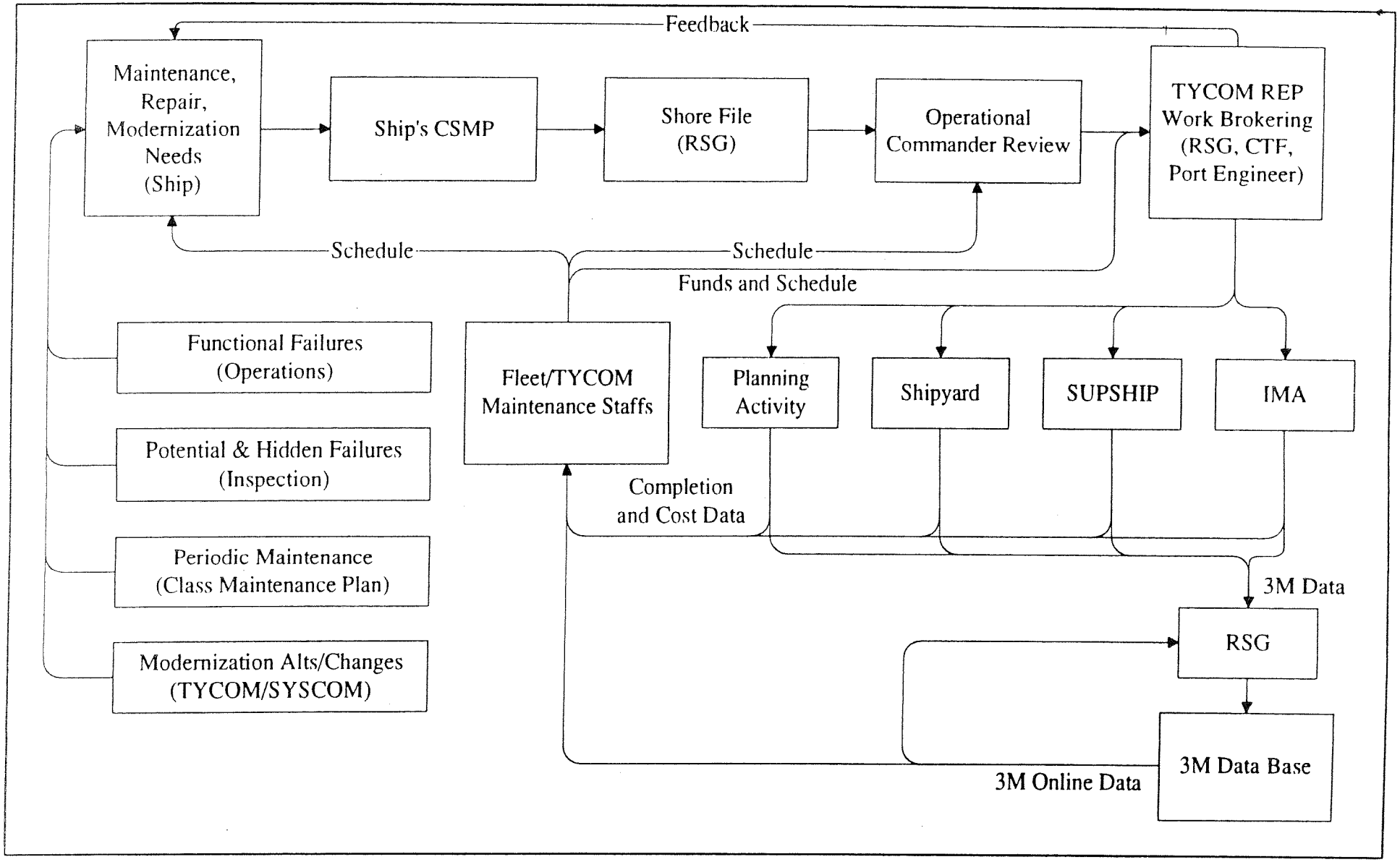


FIGURE 8. Example of Integrated Fleet Maintenance Model (IFMM)

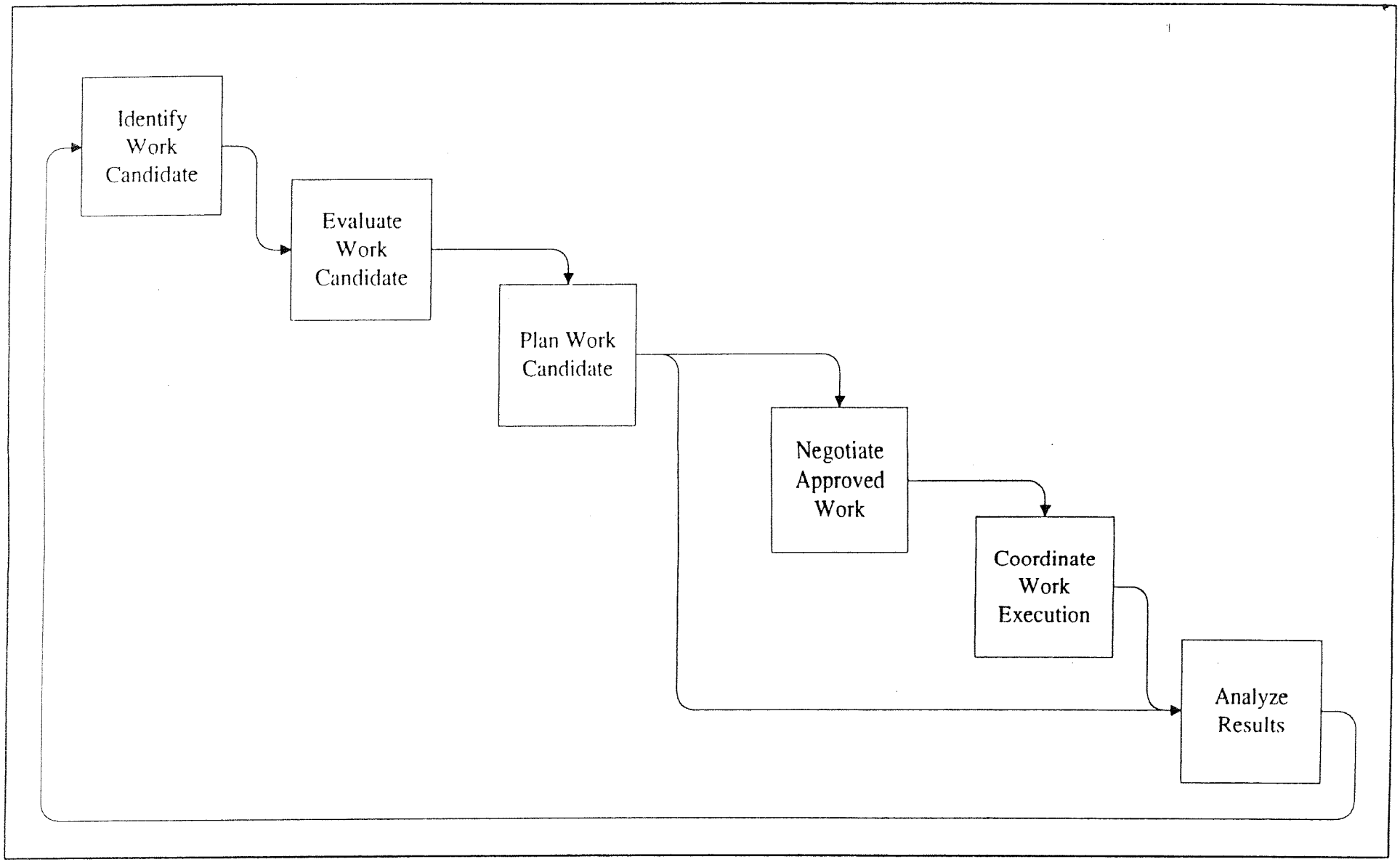


FIGURE 9. Example of Format for Section Eight
(Class Availability Workload Manday Summary Table)

Table 8-1

Estimated Availability Man-Days Required to Support
Class Ship Through One Operating Cycle

Availability Man-Days											
Workload Source	IMAV 1-16	SRA 1		DSRA 2		SRA 3		ROH		Cycle	
	IMA	IMA	Depot	IMA	Depot	IMA	Depot	IMA	Depot	IMA	Depot
Planned Maint. (CMP)	1,292	143	933	143	1,076	89	969	143	7,446	1,810	10,424
Corrective Maint. (CSMP) & "D&F" Alts	2,708	200	8,067	200	10,924	200	8,031	200	40,554	3,508	67,576
Total	4,000	343	9,000	343	12,000	289	9,000	343	48,000	5,318	78,000

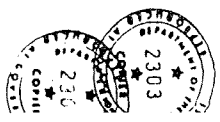


FIGURE 10. Example of Format for Appendix A to CMP (List of References)

APPENDIX A
LIST OF REFERENCES

This appendix lists technical references that were used as a basis for (identify ship class) CMP development. Requirements defined by these references, or the issue in effect, form a part of this CMP.

1. OPNAVINST 4700.7J, "Maintenance Policy for Naval Ships."

2. NAVSEA S9081-AB-GIB-010/Maint, "Reliability-Centered Maintenance Handbook."

3. NAVSEA Specification SL790-AC-SPN-010/CMP, "Class Maintenance Plan Preparation."

4. OPNAVINST C3501.2G, "Naval Warfare Mission Areas and Required Operational Environment Statements (U)."

5. OPNAVINST 4790.4B, "Ships' Maintenance and Material Management (3-M) Manual."

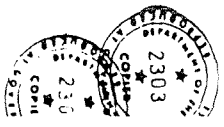
6. NAVSEA SL-720-AA-MAN-010, "Fleet Modernization Program Management Operations Manual."

7. MIL-P-24534A, "Planned Maintenance System: Development of Maintenance Requirements Cards, Maintenance Index Pages, and Associated Documentation."

8. NAVSEA S9040-AA-GTP-010/SSCR, "Shipboard Systems Certification Requirements for Surface Ship Industrial Periods (Non-Nuclear)"

FIGURE 11. Example of Task Summary Form

Title	Task No./Rev	Quantity		Task Description	Task Freq	Man-Days	Level	3M Pri Code	Related Tasks	Remarks	Applicable Reference
		Ship	Schedule								
Fuel Oil Service Piping and Misc.											
	P-2611X-001	1	1	Ultrasonically test fuel oil service piping	36	55	1	3			
	P-2611X-003	1	1	Inspect fuel oil service piping to include manifolds, gages, thermometers, operating gear and strainers	36	140	1	3			
High Pressure Air Systems											
	M-55111-002	X	X	Inspect and 150% hydrostatic test high pressure air flasks	144	72	1	4			NSTM 505
	M-55111-004	2	1	Inspect and test high pressure air separators	36	2	1	4			NSTM 551



APPENDIX A

EXAMPLE OF SECTION SIX OF THE CMP DOCUMENT

SECTION SIX
SUPPLY SUPPORT

6.1 GENERAL

This section presents a brief description of the process by which supply support is provided to insure the availability of materials during scheduled ship availability periods. The focus is on material support for periodic maintenance requirements of an extended operating cycle but also discusses material support for corrective maintenance. Navy organizational activities involved in material support are also identified.

6.2 SUPPLY SUPPORT PROCESS

The Class Maintenance Plan contains periodic maintenance tasks. Therefore, it is possible to forecast and provide for material procurement in advance of their accomplishment.

The supply support process for the (Ship Class) Class maintenance program involves material identification, material support planning and execution.

6.2.1 Material Identification Phase

Material identification is conducted by the TYCOM-authorized Planning Activity. Material support requirements for the overhaul of equipments are identified through analysis of technical documents such as, Technical Repair Standards, Intermediate Maintenance Standards, Technical Manuals and Drawings, Allowance Parts Lists, etc. From these documents, materials required to support each equipment for which maintenance tasks have been identified as well as anticipated corrective maintenance tasks are identified and documented in Material Ordering Guides (MOGs). A MOG identifies all material items required to complete a Class "B" overhaul of a particular equipment.

Material support for CMP tasks that are not Class "B" overhauls is accomplished through the use of Task Material Lists (TMLs). TMLs are prepared from MOGs to support specific material requirements of CMP tasks.

6.2.2 Planning Phase

This phase includes the forecasting of CMP task material requirements and processing of the forecast requirements to aid in the procurement of material to support scheduled planned maintenance.

The Planning Activity periodically forecasts material requirements by generating a material requirements forecast tape and submitting it to SPCC. This tape identifies the full range of material requirements by task, hull, and availability. It is a forecast of the material required in the next five-year period to accomplish all (Ship Class) Class CMP maintenance actions programmed for the scheduled availabilities. The forecast tapes include items managed by the Navy [SPCC, Aviation Supply Office (ASO)], Hardware Systems Commands and items managed by other Inventory Managers [e.g., Defense Logistics Agency (DLA)] and the other services.

SPCC processes the forecast tape through a series of automated programs and generates a return tape to the Planning Activity containing supply status for forecasted DLA cog items and a listing of Numerical Stockage Objectives (NSOs) for SPCC cog items.

Support material forecast by the Planning Activity also includes those items under the management of the various Hardware Systems Commands (HSCs). However, HSC items are bypassed during the SPCC processing of forecast requirements. Individual HSC programs that support CMP implementation independently track scheduled ship availabilities and provide material support as required based on liaison with the individual ships and the appropriate Type Commander.

6.2.3 Execution Phase

DEPOT-LEVEL AVAILABILITIES

The execution phase consists of production Job Requirements Lists (JRLs), the Advanced Repair Material List (ARML), and draw-down of required material.

JRLs identify all material required to accomplish an associated CMP task. The JRL is similar to a TML but includes material availability information. JRLs for each scheduled CMP task are included as part of the availability work package and provide the performing activity with material ordering and stock status information on all Defense Logistics Agency (DLA) material required to support planned maintenance tasks included in the work package. However, for SPCC cognizant items, the JRL identifies NSOs but does not provide material ordering or stock availability data.

The ARML, also produced by the Planning Activity, is similar to the JRL in that it provides material ordering information in support of regular overhauls to the performing activity. It supports accomplishment of Class "B" equipment overhauls included in the work package that are not CMP related. The ARML is created from the MOG data base and comprises the total MOGs for all non-CMP related Class "B" overhaul tasks included in the work package. The ARML is produced in conjunction with the Preliminary Work Package and is provided with it. The Planning Activity recommends the advance procurement of long lead time materials after screening the Preliminary Work Package against the POT&I or Material Self Assessment results.

Upon receipt of the availability work package complete with Planning Activity screening action, the performing activity or applicable SUPSHIP organization initiates material draw-down by submitting requisitions for Long Lead-Time Material (LLTM) to the supply system. Requisitions for Hardware Systems Command managed items are submitted by the performing activity or applicable SUPSHIP organization, and additionally for SPAWAR managed items by the ship Commanding Officer, Type Commander or SPAWAR Field Activity, in accordance with established procedures.

Normally, support materials will be requisitioned from the Navy Supply System for all SRA and ROH availabilities. However, the ship repair contracts for certain availabilities performed in private shipyards require that the performing activity provide all necessary materials. Under these circumstances, a MOG is provided to the cognizant SUPSHIP activity for utilization by the private shipyard but material requirements will not be levied against the Naval Supply System. Only specific Hardware Systems Command managed equipments required to support specific CMP changeout requirements will be provided as Government Furnished Material (GFM).

INTERMEDIATE-LEVEL AVAILABILITIES

Procedures for providing supply support for Intermediate Maintenance Availabilities are somewhat different. Since the Planning Activity does not develop work packages for IMAVs, supply support for CMP tasks for specific IMAVs is not accomplished. IMAV CMP tasks are planned for "Key Event" intervals rather than for specific IMAVs. Generation of the "Key Event" tape includes merging the CMP tasks scheduled by LRMS with the Master Job Catalog (MJC) file and providing a Job Sequence Number (JSN) for each included task. Upon receipt of the "Key Event" tape, the Type Commander updates the ship's CSMP to reflect CMP task requirements. Ships with the SNAP II computer system installed receive the "Key Event" tape directly from the Planning Activity. The SNAP II computer is used by the ship to update the CSMP with CMP task requirements and generate Automatic Work Requests. CMP task related material required to support IMAVs is either issued directly from IMA stock or is requisitioned from the Naval Supply System in accordance with standard procedures.

For SPAWAR managed 2Z cognizance items scheduled for changeout during an IMAV, requisitions should be submitted direct to SPAWARSYSCOM by either of the following: performing IMA; ship; TYCOM; or SPAWARSYSCOM Field Activity.

6.3 HARDWARE SYSTEMS COMMANDS (HSC) SUPPORT

Implementation of the (Ship Class) Class CMP is supported by several HSC managed programs. These programs provide equipments to support changeout tasks included in the DDG-993 Class CMP. The programs and the cognizant command are:

- Air Traffic Control (ATC) Program - NAVAIR 41223C
- Search Radar Restoration Program (SRRP) - NAVSEA 91W3DR
- Gun Weapons System Replacement Program (GWSRP) - NAVSEA 91W2
- Surface Ship Engineered Operating Cycle (SSEOC) Program - SPAWAR PMW 152-3C

Table 8-1 summarizes the HSC support of (Ship Class) Class CMP tasks specifying changeout of equipment under HSC cognizance.

The remaining CMP tasks that call for changeout of equipment involve items or equipment supported by SPCC and DLA (e.g., Cog Symbols 1H, 7G and 9N). For these tasks, replacement equipment is drawn from the Navy Supply System and, in the case of SPCC depot-level repairable (DLR) items (i.e., 7E, 7G, and 7H cog items), the old units are turned into the supply system for credit. They are subsequently refurbished under the auspices of SPCC and returned to the supply system to fulfill future requirements.

TABLE 6-1

SUMMARY OF HARDWARE SYSTEMS COMMAND SUPPORT FOR DDG-993 CLASS CMP TASKS

CMP Task #	Equipment Nomenclature	Program	Support Code	Item Cog Symbol
P42313-001	AN/URN-25 TACAN - AS-3240()/URN TACAN Ant	ATC	NAVAIR 41223C	2Q
P44171-001	AN/SSR-1 Satellite Receiving Set - As-2815/SSR-1 Antenna - AM-6534/SSR-1 Amplifier Converter	SSEOC	PMW 152-3C	7G
P44171-002	OE-82/WSC-1(V) Antenna Group - AS-3018A Antenna - AM-6691A Amplifier Filter	SSEOC	PMW 152-3C	2Z
P44121-XXX	Antenna Multicouplers and Tuners - AN/SRA-33 Antenna Coupler Group - AN/URA-38()Antenna Coupler - CU-2007/SRR Antenna Coupler Group - 14304-RF-601A Antenna Coupler Group	SSEOC	PMW 152-3C	7G 7G 7G 2Z 7G
P44131-001	AN-6675/URT R F Amplifier	SSEOC	PMW 152-3C	2Z
P45155-001	OE-172/SPS-55 Antenna Assembly	SSRP	SEA 91W3D1	2F
P45249-001	AN/SPS-49(V) Radar Antenna Assy. - AS-3263/SPS-499(V) Antenna Assy. - AS-3552 Reflector - AB-1299 Pedestal	SSRP	SEA 91W3D12	2F
P45348-001	AN/SPS-48 Antenna and Pedestal	SRRP	SEA 91W3D11	2F
P45511-XXX	AIMS Mk XII IFF System - AS-177B/UPX IFF Dipole Antenna - AS-2188/U IFF Antenna	ATC	NAVAIR 41223C	2Q

XXX - Indicates more than one task number covers this system or equipment

APPENDIX B

STANDARDIZED CMP DATA ELEMENT DESCRIPTIONS

DATA ELEMENT/DESCRIPTION

ALLOWANCE PARTS LIST/ALLOWANCE EQUIPAGE LIST

APL/AEL Field Length: 11 C

Allowance Parts List or Allowance Equipage List identifying equipment/system and components stocked in the Naval Supply System.

ALTERATION DESCRIPTION

ALT DESCRIP Field Length: 40 C

Contains the ALTERATION title or a brief description of each ALTERATION.

ALTERATION IMPACT

ALT IMPACT Field Length: 60 C

The specific impact on the maintenance task of each specified alteration; e.g. Alteration requires addition of periodic maintenance tasks.

ALTERATION NUMBER

ALT NO. Field Length: 14 C

The SHIPALT, MACHALT, ORDALT, etc. number for planned alterations which may impact the maintenance task.

APL/AEL NOMENCLATURE

APL/AEL NOMEN Field Length: 48 C

Generic name of equipment or component identified in the maintenance task, Allowance Parts List, or Allowance Equipage List. For example, Centrifugal Pump, 50 GPM, 30 PSI.

ASSIST WORK CENTER

(ASSIST W/C) CNTR — Field Length: 4 C 5 LOC

The work center(s) assigned to assist the lead work center in accomplishing a maintenance task. There are entries for a maximum of five (5) assist work centers for each applicable level of maintenance (D, I, S, and O).

ASSIST WORK CENTER MANHOURS

(ASSIST W/C) MHRS — Field Length: 4 N 5 LOC

The estimated manhours required by the assist work center(s) to perform a maintenance task. (Smallest entry is 1 manhour. No fractions are allowed.) There are manhour entries for a maximum of five (5) assist work centers for each applicable level of maintenance (D, I, S and O).

CLASS STANDARD WORK ITEM (CSWI) NUMBER

CSWI NO. — Field Length: TBD

The Class Standard Work Item(s) (CSWI) which define the contractual specifications for accomplishment of the CMP task in the private sector availability planning process.

CMMS DESCRIPTION

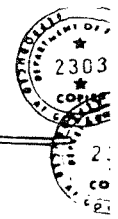
CMMS DESCRIP — Field Length: 30 C

Description of task change necessitated by a specific Class Maintenance Monitoring System (CMMS) action. Example, frequency changed from 40 to 60 months.

CMMS NUMBER

CMMS NO. — Field Length: 15 C

The serialized number of the Problem Identification Report, Problem Analysis Report, or Single Sheet Summary (PIR/PAR/SSS) of the CMMS.



CONDITION BASED MAINTENANCE IMPLEMENTATION STRATEGY

CBM IMPLEMENTATION STRATEGY Field Length: 250 C

For equipment covered by a condition based maintenance (CBM) program, specifies the type and method of condition assessment testing to be performed and the engineering/ analytical basis or rationale for that testing. For example: AEC Program vibration analysis and pump performance testing are required because of a long history of bearing failures and pump/motor misalignment.

D/I/S/O DOP (Computer-Generated Heading Only)

D/I/S/O DOP Field Length: 1 C NOT IN DB

Heading for the Lead and Assist Work Center (number) and Manhour entries.

D - Depot
I - Intermediate
S - Technical Support Unit
O - Organizational (Ships Force)
DOP - Designated Overhaul Point

EQUIPMENT FUNCTIONAL DESCRIPTION

EQUIP FUNC DESCRIP Field Length: 48 C

Description, in shipboard terms, of the function performed by a particular equipment or component and includes the equipment identification number; e.g., Fire Pump No. 1.

EQUIPMENT IDENTIFICATION CODE

EIC Field Length: 7 C

A four or seven character equipment identification code from the EIC master file.

EQUIPMENT PER TASK

EQUIP/TASK Field Length: 3 N

The recommended number of systems/equipment on which the task is to be performed at one time.

ESTIMATED MATERIAL COST

MATL EST Field Length: 7 N

The estimated material cost (rounded to the nearest dollar) to accomplish the full intent of the CMP task for one equipment. This estimate is to be based upon the corresponding Task Material List (TML) and will be updated to reflect the latest material ordering information and actual return cost data.

FREQUENCY

FREQ Field Length: 3 N

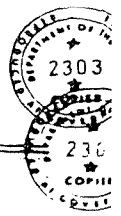
Frequency is the assigned regular interval of maintenance accomplishment. It is a three-digit number expressed in months. Frequency is derived from the task requirement source, such as a Technical Manual, NSTM, LSA, Maintenance Engineering Analysis Record (MEAR), or by an In-Service Engineering Agent (ISEA) recommendation.

HIERARCHICAL STRUCTURE CODE

HSC Field Length: 12 C

Number that uniquely identifies each system, equipment, and component in a ship's configuration, defined in NAVSEA S9040-AA-IDX-020-ESWBS 5D.

The HSC is a hierarchical structure coding convention which uniquely identifies each Functionally Significant Item (FSI) designed into a ship. The HSC, in conjunction with the ship's Unit Identification Code (UIC), provides a hull unique task assignment for availability planning. The first five digits of an HSC represent the ESWBS in which the Equipment/Component (E/C) is located. Subsequent digits, (Positions 6 thru 12), represent the E/C's relative position in the system hierarchy. Maintenance and update of the HSCs is a responsibility of the Configuration Data Manager (CDM).



IN-SERVICE ENGINEERING AGENT COGNIZANCE

ISEA COG — Field Length: 8 C 2 LOC

The cognizant System and Equipment In-Service Engineering Agent(s). (Activity name only - no organizational code entry.)

ISSUE DATE

ISSUE DATE — Field Length: 8 D OR 10 C

Date maintenance task is added to CMP.

LEAD WORK CENTER

LEAD CNTR — Field Length: 4 C

The primary work center assigned to perform a maintenance task. There is a lead work center entry for each of the applicable levels of maintenance (D, I, S, and O).

LEAD WORK CENTER MANHOURS

(LEAD W/C) MHRS — Field Length: 4 N

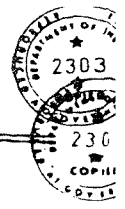
The estimated manhours required by the primary work center to perform a maintenance task. There is an entry for each applicable level of maintenance (D, I, S, and O).

LEVEL OF MAINTENANCE (LOM)

LEVEL OF MAINT — Field Length: 2 C

The applicable Level of Maintenance entry is the appropriate code consistent with that of the 3-M Manual (OPNAV 4790.4).

Allowed Entries:
1 - Depot
2 - Intermediate
3 - Technical Support Unit (TSU)
4 - Organizational (Ships Force).



LOCATION

LOCATION — Field Length: 24 C

The shipboard location of the equipment. The numbering convention is deck, frame, relationship to centerline, and compartment.

MAINTENANCE CONCEPT

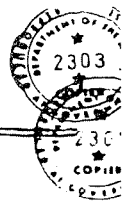
MAINT CONCEPT — Field Length: 330 C

Describes the maintenance procedures and responsibilities applicable to the system. This entry also includes the CMP maintenance task rationale/justification for equipment/components. For example, the Fire Pump is inspected periodically under the AEC Program and TARGET (SURFLANT). Inspection results are documented in 3-M. The appropriate CMP tasks are then scheduled by the ship's Maintenance Manager to correct discrepancies during an upcoming maintenance period. Actual equipment as-found condition is documented in CMP task close-out statement.

MAINTENANCE INDEX PAGE

MIP — Field Length: 18 C

Maintenance Index Page, without issue date, related to the system/equipment.



MAINTENANCE RESPONSIBILITY

MAINT RESP — Field Length: 1 C

Identifies the maintenance responsibility for each applicable level of maintenance (D, I, S, and O) as primary, secondary or tertiary. It also includes an entry to identify DOP maintenance task responsibility.

Allowed Entries:
P - Activity assigned primary responsibility for accomplishing a task as determined by CMP maintenance objectives, LSAs, or MEAR.
S - Activity assigned secondary responsibility for accomplishing a task.
T - Activity assigned tertiary responsibility for accomplishing a task.
X - Indicates that a Designated Overhaul Point (DOP) will perform equipment refurbishment.

MASTER JOB CATALOGUE JOB CONTROL NUMBER

MJC JCN — Field Length: 13 C

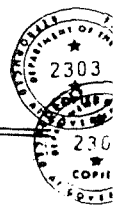
The Job Control Number, from the Master Job Catalogue, used to generate the Automated Work Request (AWR) for the Current Ship's Maintenance Project (CSMP).

MATERIAL REQUIRED

MATERIAL REQD — Field Length: 3 C

Indicates whether material is required to support the task.

Allowed Entries:
YES - Material Required
MOG - Material Ordering Guide (MOG)
TML - Task Material List (TML)
NO - No Material Required



MISSION CRITICALITY CODE

MCC — Field Length: 1 N

A numeric code that is assigned a value between 1 and 4. The code relates the importance of a system, equipment or component to the mission of a ship, with four (4) being the most significant and one (1) the least. MCCs 1 through 4 correlate to casualty reporting (CASREP) severity, with MCC 4 equivalent to C4 severity, MCC 3 equivalent to C3, etc.

OPNAV 4790/2K BLOCK 35 TASK DESCRIPTION

BLOCK 35 — Field Length: TBD

A complete and detailed task description written in 4790/2K format. This data element will also be used in the creation of the Master Job Catalog (MJC).

PAGE (Computer-Generated MPF Entry Only)

PAGE — Field Length: 3 N NOT IN DB

Page sequence number.

PRINT DATE (Computer-Generated MPF Entry Only)

PRINT DATE — Field Length: 8 D NOT IN DB

Date Volume 2 was printed for issue.

PRIORITY

PRI — Field Length: 1 C

Priority number signifying the essentiality of performing the task; coded in accordance with the 3-M System as follows:

1 - Mandatory
2 - Essential
3 - Highly Desirable
4 - Desirable

QUANTITY (Per Ship)

QTY — Field Length: 3 C

The number of systems/equipment installed on a ship An "X" means that the quantity is not standard, not quantifiable, or not applicable e.g., for various system valves, piping and flex hoses.

REFERENCED AUTHORITY

REF AUTH — Field Length: 90 C

Legislated requirement or other authority requiring the work item to be accomplished. For a legislated task, this item includes the reference (i.e., NSTM Section, authorizing letter, etc.) that mandates the legislated task.

RELATED CMP TASKS

RELATED TASKS — Field Length: 13 C/1 C

References other CMP maintenance tasks which should be evaluated for accomplishment in conjunction with the given task. Overriding tasks are indicated by (O) following the related task number. An overriding task is one in which a longer periodicity (e.g., 80 month) task incorporates the scope or eliminates the need for a shorter periodicity (e.g., 20 month) task. Tasks superceded by (O) tasks are indicated by (S) following the related task number. Unplanned maintenance tasks performed concurrently with planned maintenance tasks are indicated with a (C) following the related task number. This data element is comprised of a 13 character task number field and a one character related CMP task code field.

REMARKS

REMARKS — Field Length: 720 C

Lists special reporting requirements and other information pertinent to the task that are not included elsewhere.

REMOVAL REQUIRED

REMOVAL REQD — Field Length: 1 L

Equipment removal from the ship required to accomplish the task: Allowed entries are yes/no.

REMOVAL ROUTE

REMOVAL ROUTE — Field Length: 2 C

Lists the established shipboard removal route identifier.

REPAIR STANDARD

REPAIR STD — Field Length: 17 C

Intermediate Maintenance Standard (IMS), Technical Repair Standard (TRS), or other standard(s) used to accomplish the maintenance task.

REPAIRABLE POOL

REPAIR POOL — Field Length: 5 C

An entry to indicate the repairable/rotatable pool program supporting the maintenance task.

Allowed Entries:
SSEOC
AERP
PDLR
OTHER (Specific program will be indicated in the comments section of the MPF Sheet.)
DOP
N/A (Not Applicable)

REVISION (CMP TASK)

REV — Field Length: 1 C

CMP task revision letter which incorporates the changes of the specified CMMS.

REVISION DATE

REV DATE — Field Length: 8 D OR 10 C

Date of the latest revision to the task.

SHIP CLASS NO.

SHIP CLASS NO. — Field Length: 4 C

The hull number of the lead ship for a group or class of ships, within a ship type, built to the same general specifications (e.g., 963).

SHIP TYPE

SHIP TYPE — Field Length: 6 C

The designation assigned to a ship indicating its type or classification (e.g., DD, LHA, AO) and specified with the SHIP CLASS NO.

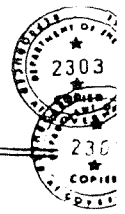
SITUATION REQUIRED

SIT REQD — Field Length: 5 C

A code which indicates special requirements for performance of the task.

Allowed Entries:

D/D - DryDock (Task requires a DryDock)
ROH - Regular Overhaul (Task can be done only during ROH or similar time frame)
COH - Complex Overhaul (Task can be done only during COH or similar time frame)
SCO - Service Craft Overhaul
PMA - Phased Maintenance Availability
DPMA - Drydocking Phased Maintenance Availability (Task requires a Drydock)
SRA - Selected Restricted Availability
DSRA - Drydocking Selected Restricted Availability (Task requires a Drydock)
IMAV - Intermediate Maintenance Availability
EDSRA - Extended Drydocking Selected Restricted Availability (Task requires a Drydock)
RAV - Restricted Availability
PRAV - Planned Restricted Availability



SPECIAL REQUIREMENTS

SPECIAL REQTS — Field Length: 200 C

Special qualifications, certifications, tools, conditions, material, etc., as required.

SPECIAL TOOLS REQUIRED

SPECIAL TOOLS REQD — Field Length: 1 L

Special tools required to accomplish the task. Allowed entries are yes/no.

SYSTEM

SYSTEM — Field Length: 50 C

A system description corresponding to the ESWBS number incorporated into the task number. It is defined in NAVSEA S9040-AA-IDX-010/SWBS().

TASK ABBREVIATION

TASK ABBREV — Field Length: 30 C

An abbreviated version of the task description. To facilitate computer searching capabilities, abbreviations must be used at all times even when sufficient space is available to not abbreviate. All abbreviations must conform to MIL-STD-12. A hyphen must be used to separate the equipment name from the task action.

Example: FO SVCE PMP - OVHL B indicates accomplishment of a Class "B" overhaul to the Fuel Oil Service Pump.

TASK APPLICABILITY

TASK APPL — Field Length: VARIOUS

A two line entry that indicates applicability of the maintenance task and the status and fleet assignment for each ship of the class:

Allowed Entries:

1st line: Ship Status
X - Active
R - Reserve

2nd line: Fleet Assignment
A - Atlantic
P - Pacific.

TASK DESCRIPTION

TASK DESCP — Field Length: 400 C

Concise description of specific maintenance actions required by the task. The task description should begin with the maintenance action, such as Replace, Clean, Inspect, etc.

TASK NUMBER

TASK NO. Field Length: 13 C

A thirteen (13) character identification number assigned to each CMP task. The task number is comprised of a one (1) character prefix, a hyphen, a five (5) digit ESWBS code number, a hyphen, a three (3) digit sequence number, a space, and a revision letter. For example, E-52121-005-A

ALLOWABLE CMP TASK PREFIX LETTERS:

E - Engineered time-directed task, not derived through Reliability Centered Maintenance (RCM) analysis.

Q - Qualified CMP task where the scope of work is determined by condition assessment. These tasks will be used by the maintenance manager as Condition Based Maintenance (CBM) repair options.

I - Inspection or test task, accomplished at the stated periodicity to comply with NAVSEA or Type Commander instructions. These inspection or test tasks may be conducted prior to the availability period.

M - Mandatory tasks, other than inspections or tests, accomplished at the stated periodicity to comply with NAVSEA or Type Commander instructions.

P - CMP Task which is derived from Reliability Centered Maintenance (RCM).

L - Inactive Equipment Maintenance task.

C - Concurrent Maintenance task.

An "X" in the fifth position of the ESWBS number indicates more than one reporting level (last ESWBS digit) is involved (i.e., to specify one task for identical equipment with more than one ESWBS number e.g., where last ESWBS digit is 1 for SSDG #1, 2 for SSDG #2, etc.

In the revision character position, the letter "A" is assigned to the first revision to the original CMP task. The letter is then changed (i.e., to B, C, D, etc.) as subsequent revisions are made to the CMP task, scope or periodicity.

TECH REP REQUIRED (Database Entry Only)

TECH REP REQD Field Length: 1L

Technical representative or vendor required to accomplish the task: Allowed entries are yes/no.

TECHNICAL MANUALS

TECH MANUALS Field Length: 24 C

Lists applicable technical manual(s) related to the system/equipment.

TOTAL TASK (MANHOURS)

TOTAL TASK (MHRS) Field Length: 5 N

The total estimated manhours required for all LOM levels to perform the maintenance action(s) associated with each equipment, system or group of work elements prescribed by the CMP task (excluding DOP). It is used for availability workload projections.

VENDOR/MODELS

VENDOR/MODELS Field Length: 95 C

Equipment vendor names(s) and model number(s), where available. Example, Blackmer X3NFD rotary pump.

WORK CENTER TOTALS (Calculated Fields)

W/C TOT Field Length: 6 N 7 LOC

Total manhours for the lead work center(s) and each assist work center for all (i.e., D, I, S, and O) levels of maintenance.

APPENDIX C

GLOSSARY OF ACRONYMS

GLOSSARY OF ACRONYMS

AEC	Assessment of Equipment Condition program
ALMOP	ASROC Launcher Major Overhaul Program
ARML	Advanced Repair Material List
ASO	Aviation Supply Office
ASROC	Anti-Submarine Rocket
ASW	Antisubmarine Warfare
ATC	Air Traffic Control
ATE	Automatic Test Equipment
BITE	Built-In Test Equipment
CBM	Condition-Based Maintenance
CIWS	Close-In Weapon System
CMP(s)	Class Maintenance Plan(s)
CNO	Chief of Naval Operations
COH	Complex Overhaul
COMNAVTELCOM	Commander Naval Telecommunications Command
COMSEC	Communications Security Equipment
CSMP	Current Ship's Maintenance Project
D-level	Depot Level (maintenance)
DLA	Defense Logistics Agency
DLR	Depot Level Repairable
DRPM	Direct Reporting Program Manager
DSRA	Docking Selected Restricted Availability
EOC	Engineered Operating Cycle; Extended Operating Cycle
ESWBS	Expanded Ship Work Breakdown Structure
FCS	Fire Control System
FTSC	Fleet Technical Support Center
GFM	Government Furnished Material
GWSRP	Gun Weapons System Replacement Program
HSC(s)	Hardware Systems Command(s)
I-level	Intermediate Level (maintenance)
IEM	Inactive Equipment Maintenance
IFMM	Integrated Fleet Maintenance Model
ILS	Integrated Logistics Support
IMA(s)	Intermediate Maintenance Activity(ies)
IMAV(s)	Intermediate Maintenance Availability(ies)
ISEA	In-Service Engineering Agent
ISIC	Immediate Superior In Command
JCN	Job Control Number
JRL	Job Requirements List
JSN	Job Sequence Number
LAMPS	Light Airborne Multi-Purpose System

LLTM	Long Lead Time Material
LRMS(s)	Long Range Maintenance Schedule(s)
LSA	Logistics Support Analysis
MCC	Mission Criticality Code
MEASURE	Metrology Automated System for Uniform Recall and Reporting
MIP	Maintenance Index Page; Military Improvement Plan
MJC	Master Job Catalog
MOG	Material Ordering Guide
MRC	Maintenance Requirement Card
MRMS	Maintenance Resource Management System
NAWC	Naval Air Warfare Center
NAVAIR	Naval Air Systems Command
NAVSEA	Naval Sea Systems Command
NAVSUP	Naval Supply Systems Command
NSO	Numerical Stockage Objectives
NSTM	Naval Ships Technical Manual
NSWC	Naval Surface Warfare Center
NSWSES	Naval Ship Weapon Systems Engineering Station
O-level	Organizational Level (maintenance)
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	OPNAV Instruction
PEO	Program Executive Office
PERA	Planning and Engineering for Repairs and Alterations
PIP	Phalanx Inspection Program
PMA	Phased Maintenance Availability
PMS	Planned Maintenance System
PMT	Performance Monitoring Team
POT&I	Pre-Overhaul Test and Inspection
RCM	Reliability Centered Maintenance
ROH	Regular Overhaul
RSG	Readiness Support Group
SAM	Surface-to-Air Missile
SFR	Semiannual Force Revision
SHIPALT	Ship Alteration
SIMA	Shore Intermediate Maintenance Activity
SNAP	Shipboard Non-Tactical Automated Data Processing Program
SPALT(s)	Special Project Alteration(s)
SPAWAR	Space and Naval Warfare Systems Command
SPCC	Ship's Parts Control Center
SPM	Ship Program Manager
SRA	Selected Restricted Availability
SRF	Ship Repair Facility
SRRP	Search Radar Restoration Program
SSEOC	Surface Ship Engineered Operating Cycle
SSM	Surface-to-Surface Missile
SSPO	Strategic Systems Projects Officer
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair

TARGET	Technical Assessment, Repair, Groom and Evaluation Team
2M	Miniature/Microminiature
3-M	Maintenance and Material Management (System)
TMDE	Test Measuring and Diagnostic Equipment
TML	Task Material List
TYCOM(s)	Type Commander(s)
WIP	Warfighting Improvement Plan
WPD	Work Package Definition

APPENDIX D

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Terms in *italics* are found in this glossary.

Condition Directed Maintenance	An *inspection* or *test* to discover a *potential failure* condition which can be corrected before *functional failure* occurs. Condition directed maintenance permits *replacement* or *rework* to be triggered by a unit's condition rather than by its age.
Corrective Maintenance	The repair of a *functional* or *potential failure*. The work may consist of *replacement* or *rework*. Corrective maintenance may be *planned* or *unplanned*.
Evident Function	A *function* whose failure is evident to the user during normal activities.
Failure Finding Maintenance	A visual or operational check to determine whether an item is able to provide *hidden functions*.
Function	A capability of a hardware element that is a specific requirement of its design.
Functional Failure	The inability of a system or subsystem to provide a required *function*.
Hidden Function	A *function* provided by an item for which there is no immediate indication of failure. The demand for hidden functions usually follows another failure or unexpected event.
Inspection	An examination of an item against a specific standard.
Maintenance Period	Time during which equipment is made available for maintenance. As one example, a single item may be made available for ship's force maintenance while underway, by taking off-line one unit in a system with several redundant units. As another example, the entire ship may be made available for maintenance in an IMAV, PMA, DPMA, SRA, DSRA, ROH, etc.
Occasional Maintenance	Maintenance tasks performed when triggered by specific events or occasions.
Periodic Maintenance	Maintenance tasks performed at fixed intervals or periodicities.
Planned Maintenance	Maintenance tasks performed during a *scheduled maintenance period*. Planned maintenance comprises both *preventive maintenance* and also that *corrective maintenance* which can await the next *scheduled maintenance period*.
Potential Failure	Equipment condition that indicates that *functional failure* is imminent.
Preventive Maintenance	Maintenance intended to prevent system failure by preventing failures of *evident functions* or discovering failures of *hidden functions*.
Replacement	The removal from service of an item. Replacement discards an old item and replaces it with a new item of the same kind.
Rework	That work necessary to return the item to a specific standard. Rework results in the continued use or reuse of the same item.
Scheduled Maintenance Period	A *maintenance period* conducted periodically according to a schedule.
Test	A quantitative check to determine if one or more *functions* of an item performs within specified limits.
Time Directed Maintenance	*Rework* or *replacement* work triggered by a unit's age rather than by its condition. Age may be measured in terms of calendar time or in terms of usage (for example, start/stop cycles, rounds fired, etc.).

Unplanned Maintenance	Maintenance tasks not performed during a *scheduled maintenance period*. Unplanned maintenance is usually *corrective maintenance* that is too urgent to await the next *scheduled maintenance period*.